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# Past participle agreement in Abruzzese: split auxiliary selection and the null-subject parameter

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**Abstract** In this paper, we present an analysis of the "person-driven" auxiliary-selection system of one variety of the Upper Southern Italo-Romance dialect Abruzzese, along with an account of the pattern of past participle agreement in this variety, which differs somewhat from what is found in more familiar Romance languages. Our account relies on the technical mechanisms of agreement as outlined in Chomsky (1995, 2001), in particular a variant of Chomsky's (2008) proposal regarding feature inheritance by non-phase heads of features belonging to phase heads, combined with Gallego's (2006) notion of phase-sliding. We also utilise some aspects of Müller's (2004) analysis of ergativity, and propose an account of a typological generalisation regarding the absence of person-driven auxiliary selection first put forward in Kayne (2000:127) in the Germanic languages. To the extent that the analyses proposed successfully apply the mechanisms put forward in the recent versions of the minimalist program, the postulation of these mechanisms is supported by our analysis with evidence from a new empirical domain. We also offer some general speculations regarding auxiliary selection in general.

**Keywords** Italo-Romance · Participles · Agreement · Person · Split-ergativity · Auxiliaries

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# 1 Introduction

## 1.1 Person-driven auxiliary selection

It is well-known that many Southern Italo-Romance varieties show "person-driven" auxiliary selection in compound tenses. That is, in these varieties, the selection of the HAVE or BE auxiliary in compound tenses depends on the person specification of the subject, rather than, or—in some varieties—in addition to, the more familiar pattern of auxiliary selection where this is determined by the argument structure of the verb as described and analysed in classic work by Burzio (1986). This phenomenon has been described in traditional dialectological terms by Rohlfs (1969) and Tuttle (1986). In recent years it has attracted a fair amount of attention in generative grammar: see the analyses in Cocchi (1995), Kayne (2000), Ledgeway (2000), Legendre (2010), Loporcaro (2010) and Manzini and Savoia (2005). Here we concentrate on Eastern Abruzzese (EA henceforth), a variety spoken in the eastern part of Abruzzo, mainly in the provinces of Teramo, Pescara and Chieti. Unless otherwise stated, the examples presented here are based on fieldwork carried out in and around the village of Arielli (province of Chieti).

In EA the choice of auxiliary in the present perfect is entirely conditioned by the person of the subject, as the following paradigms show (note that the past participle agrees with the plural subject here, as, for example, shown by the alternation *fatte/fitte* in (1b); we will analyse this phenomenon and comment on the form of the alternation in Sect. 2). Compare the following Italian/Abruzzese tables:

(1) a. Italian transitive verb:

| Italian transitive | | | | | |
|---|---|---|---|---|---|
| 1st sg | io | ho | fatto | una | torta |
| | I | have-1st sg | made-pp masc sg | a-fem sg | cake-fem sg |
| 2nd sg | tu | hai | fatto | una | torta |
| | you | have-2nd sg | made-pp masc sg | a-fem sg | cake-fem sg |
| 3rd sg | lei | ha | fatto | una | torta |
| | she | has-3rd sg | made-pp masc sg | a-fem sg | cake-fem sg |
| 1st pl | noi | abbiamo | fatto | una | torta |
| | we | have-1st pl | made-pp masc sg | a-fem sg | cake-fem sg |
| 2nd pl | voi | avete | fatto | una | torta |
| | you-pl | have-2nd pl | made-pp masc sg | a-fem sg | cake-fem sg |
| 3rd pl | loro | hanno | fatto | una | torta |
| | they | have-3rd pl | made-pp masc sg | a-fem sg | cake-fem sg |

b. Abruzzese transitive verb:

| Abruzzese transitive | | | | | |
|---|---|---|---|---|---|
| 1st sg | ji | so’ | fatte | na | torte |
| | I | am-1st sg | made-pp sg | a-fem sg | cake-fem sg |
| 2nd sg | tu | si | fatte | na | torte |
| | you | are-2nd sg | made-pp sg | a-fem sg | cake-fem sg |
| 3rd sg | esse | a | fatte | na | torte |
| | she | has-3rd sg | made-pp sg | a-fem sg | cake-fem sg |
| 1st pl | nu | seme | fitte | na | torte |
| | we | are-1st pl | made-pp pl | a-fem sg | cake-fem sg |
| 2nd pl | vu | sete | fitte | na | torte |
| | you-pl | are-2nd pl | made-pp pl | a-fem sg | cake-fem sg |
| 3rd pl | jisse | a | fitte | na | torte |
| | they | have-3rd pl | made-pp pl | a-fem sg | cake-fem sg |

c. Italian unergative intransitive verb:

| Italian unergative | | | |
|---|---|---|---|
| 1st sg | io | ho | lavorato |
| | I | have-1st sg | worked-pp masc sg |
| 2nd sg | tu | hai | lavorato |
| | you | have-2nd sg | worked-pp masc sg |
| 3rd sg | lei | ha | lavorato |
| | she | has-3rd sg | worked-pp masc sg |
| 1st pl | noi | abbiamo | lavorato |
| | we | have-1st pl | worked-pp masc sg |
| 2nd pl | voi | avete | lavorato |
| | you-pl | have-2nd pl | worked-pp masc sg |
| 3rd pl | loro | hanno | lavorato |
| | they | have-3rd pl | worked-pp masc sg |

d. Abruzzese unergative intransitive verb:

| Abruzzese unergative | | | |
|---|---|---|---|
| 1st sg | ji | so’ | fatijate |
| | I | am-1st sg | worked-pp sg |
| 2nd sg | tu | si | fatijate |
| | you | are-2nd sg | worked-pp sg |
| 3rd sg | esse | a | fatijate |
| | she | has-3rd sg | worked-pp sg |
| 1st pl | nu | seme | fatijite |
| | we | are-1st pl | worked-pp pl |
| 2nd pl | vu | sete | fatijite |
| | you-pl | are-2nd pl | worked-pp pl |
| 3rd pl | jisse | a | fatijite |
| | they | have-3rd pl | worked-pp pl |

e. Italian unaccusative intransitive verb:

| Italian unaccusative | | | |
|---|---|---|---|
| 1st sg | io | sono | caduto/a |
| | I | am-1st sg | fallen-{m/f} sg |
| 2nd sg | tu | sei | caduto/a |
| | you | are-2nd sg | fallen-{m/f} sg |
| 3rd sg | lui/lei | è | caduto/a |
| | he/she | is-3rd sg | fallen-{m/f} sg |
| 1st pl | noi | siamo | caduti/e |
| | we | are-1st pl | fallen-{m/f} pl |
| 2nd pl | voi | siete | caduti/e |
| | you-pl | are-2nd pl | fallen-{m/f} pl |
| 3rd pl | loro | sono | caduti/e |
| | they | are-3rd pl | fallen-{m/f}pl |

f. Abruzzese unaccusative intransitive verb:

| Abruzzese unaccusative | | | |
|---|---|---|---|
| 1st sg | ji | so' | cascate |
| | I | am-1st sg | fallen-pp sg |
| 2nd sg | tu | si | cascate |
| | you | are-2nd sg | fallen-pp sg |
| 3rd sg | esse | a | cascate |
| | she | has-3rd sg | fallen-pp sg |
| 1st pl | nu | seme | caschite |
| | we | are-1st pl | fallen-pp pl |
| 2nd pl | vu | sete | caschite |
| | you-pl | are-2nd pl | fallen-pp pl |
| 3rd pl | jisse | a | caschite |
| | they | have-3rd pl | fallen-pp pl |

There is in fact a very wide range of variation among the dialects of Central and Southern Italy which show this kind of person-driven auxiliary selection. Many quite widely attested systems combine person-driven and argument-structure driven auxiliary selection. In these varieties, the choice of auxiliary in the 3rd person depends on the argument structure of the verb, while the 1st and 2nd persons consistently choose BE. This pattern is found in Colledimacine, Torricella Peligna, Borgorose-Spedigno, Amandola, Ortezzano and Tufillo (Manzini and Savoia 2005, II:728; see also Bentley and Eythórsson 2003; Legendre 2010; Loporcaro 2010; Tuttle 1986).

Further variants are also attested. Manzini and Savoia (2005, II:728) list varieties in which auxiliary-selection is person-driven in all persons except the 1sg and 3sg, where it depends on argument structure (Vastogirardi), and varieties where the situation described in the text holds only in the singular (1sg and 2sg choose BE; 3sg is dependent on argument structure), with HAVE consistently chosen in the plural (Agnone, Ruvo Bitetto, Popoli, Montenerodomo, Padula, Castelvecchio Subequo). In many cases, a given person-number combination may also show apparent free

variation in the choice of auxiliary. There are varieties where only BE is found, in all persons with all verbs (Roccasicura, Castelpetroso, Poggio Imperiale, Gallo, Sassinoro), those where only HAVE is found (in Sicily, Salento and the extreme south of Calabria) and those where the forms of HAVE and BE have fallen together in certain tense/person/number combinations (see Manzini and Savoia 2005 III:1ff for illustration and analysis). Finally, there are a few Northern dialects which show person-driven auxiliary selection; we will briefly discuss some of these in Sect. 4.

Of necessity, we leave this wide range of variation aside in our discussion here, and confine our attention to EA, where the choice of auxiliary appears to be entirely driven by person (and tense/mood, as we shall see below), speculating only briefly about what might be going on in these other systems. Space prevents a more thorough survey and analysis of the range of systems attested; see again Manzini and Savoia (2005 II & III:Chap. 5).

### 1.2 Past participle agreement

A further aspect of EA syntax which is of great interest concerns the pattern of past participle agreement. The past participle (pp) in EA **always** agrees with a plural DP, whether that DP is the subject or the object:[1]

(2) a. Giuwanne a pittate nu mure.
**John-sg** has-3rd sg/pl painted-**pp sg a wall**
'John has painted a wall.' [sg SUBJ-sg OBJ]

b. Giuwanne a pittite ddu mure.
John-sg has-3rd sg painted-**pp pl two walls**
'John has painted two walls.' [sg SUBJ-pl OBJ]

c. Giuwanne e Mmarije a (*pittate)/pittite nu mure.
**John and Mary-pl** have-3rdsg/pl **painted-pp(sg)/pl** a wall
'John and Mary have painted a wall.' [pl SUBJ-sg OBJ]

d. Giuwanne e Mmarije a (*pittate)/pittite ddu mure.
John and Mary-pl have-3rd sg/pl **painted-pp(sg)/pl** two walls
'John and Mary have painted two walls.' [pl SUBJ-pl OBJ]

Here the singular vs. plural opposition is reflected in the forms *pittate* (singular) vs. *pittite* (plural) of the past participle. Observe that in (2c–d) a singular past participle is not allowed. Furthermore, past participle agreement with a plural subject also takes place when a singular object clitic is present:

[1] There is also agreement with the indirect object, at least when this is cliticised:

(i) A jisse ji le so riccundite.
to them I it am told-pl
'I told them it.'

Again, we will leave this aside here. This is also found in Nuorese Sardinian (Jones 1993:97, cited in Loporcaro 2010:8).

(3) Giuwanne e Mmarije l'a pittite, (lu mure).
John and Mary-pl it-sg-have painted-pp pl, the wall
'John and Mary have painted it, the wall.'

In fact, past participles do not in general agree with proposed direct-object clitics.[2] We can maintain that past participle agreement is never triggered by A-movement, since, as (1b), (1d) and (1f) show, the participle agrees with the surface subject in transitives, unergative intransitives and unaccusative intransitives.[3]

These data contradict the generalisation formulated by Belletti (2005, III:509), as follows: "A crucial observation concerning the phenomenon of past participle agreement in Romance is that no variety allows the past participle to agree with the subject of intransitive/unergative and transitive verbs [...] Any treatment of the computation involved in past participle agreement must account for this fact." The data in (2c) and (3) indicate that past participle agreement with an external argument is possible. One of our goals here is to account for this fact, and to attempt to see why this kind of agreement is not possible in Standard Italian. Again, EA is by no means unique among Central-Southern varieties in this respect. Neapolitan consistently shows subject agreement with the past participle (Loporcaro 2010), as do the varieties of Castrovillari (Cosenza), Altamura and Castiglione dei Genovesi (Loporcaro 1998; Ledgeway 2000). Manzini and Savoia (2005, II:681) imply that both agreement with the direct object and with the subject of a transitive are widespread.

### 1.3 Typological questions

The existence of this pattern of auxiliary selection raises several important questions for any theory of comparative syntax. One such question concerns the comparison of Romance and Germanic. In both families, we observe languages in which auxiliary-selection is determined by the argument structure of the main verb; this is the case for Standard Italian among the Romance languages (as well as French, although there are some apparently arbitrary lexical restrictions on the availability of the BE-auxiliary

[2]There is, however, apparent participle agreement with fronted wh-phrases, as in:

(i) li mure-PL chi sso' pittite-PL jè rusce.
the walls-PL that am painted-PL are red
'The walls that I have painted are red.'

However, there would be agreement with *li mure* if this DP were in-situ, following the pattern in (2b). Hence it is not clear that we have cases of agreement with a moved wh-phrase where there would be no agreement with the corresponding DP in-situ. In fact, it is not clear that we would ever be able to tell.

[3]The participle also agrees with the surface subject in passives:

(i) Giuwanne e Marije jè mmagnite da li tasse
John and Mary are-pl eaten-pl by the taxes

(ii) Giuwanne jè mmagnate da li tasse
John is eaten-sg by the taxes

As these examples show, the initial consonant of the participle shows syntactically-conditioned gemination (*raddoppiamento fonosintattico, or* RF). See Biberauer and D'Alessandro (2006) for an analysis of this.

with certain unaccusatives, e.g. *disparaître* 'disappear' takes HAVE). In Germanic, German, Dutch and Danish show an argument-structure based pattern of auxiliary selection, broadly similar to what we observe for Standard Italian, as the following German examples illustrate:

(4) a. Ich habe die Apfel gegessen. (transitive)
I have the apple eaten
'I have eaten the apple.'

b. Ich habe gearbeitet. (unergative intransitive)
I have worked
'I have worked.'

c. Ich bin gefallen. (unaccusative intransitive)
I am fallen
'I have fallen.'

Also, in both families there are languages where HAVE is the only auxiliary of the perfect, BE being restricted to the passive. This is true of English and Swedish among the Germanic languages, and of Spanish and Portuguese in Romance. Moreover, it appears that the latter kind of system develops diachronically from the former; both English and Spanish clearly display a Standard-Italian kind of auxiliary selection at earlier stages.[4] But no case of person-driven auxiliary selection has come to light in Germanic; no such system exists in any standard variety, and according to Anders Holmberg (personal communication) no such system is found in any Scandinavian dialect, while Sjef Barbiers informs us (personal communication) that no such system is found in any Dutch-Flemish dialect. As far as we are aware, no Swiss German dialect shows this either. It seems to us that this fact deserves an explanation, and, following Kayne (2000:127), although implementing the idea in a rather different way, we will suggest a link between person-driven auxiliary selection and the null-subject parameter. Given the general absence of null-subject Germanic languages, this explains the absence of person-driven auxiliary selection in this family.

A second typological-comparative question raised by person-driven auxiliary selection concerns split ergativity. It has often been observed (e.g. by Mahajan 1994; Manzini and Savoia 2005) that person-driven auxiliary selection, in typically making a morphosyntactic distinction between 1st and 2nd person on the one hand and 3rd person on the other, shares an important property with split-ergative case-agreement systems. Such systems are quite widely attested, and it is fairly well-established that in these systems 1st and 2nd person pronouns and/or case/agreement marking tend to follow a nominative-accusative pattern, while 3rd person pronouns, full arguments follow an ergative-absolutive pattern, and Blake (2001:122) observes that "[i]n languages with ergative case-marking on nouns it is true more often than not that the ergative marking is lacking from first- and second-person pronouns and sometimes from third." The following Dyirbal paradigm, from Comrie (1989:131) illustrates:

[4]See McFadden and Alexiadou (2006) on auxiliary selection in the history of English, where it is shown that modality plays a major role in the development of the system; we will see below that auxiliary selection in EA is also sensitive to modality, and the same is noted for the history of Neapolitan by Ledgeway (2003). On Spanish, see Penny (1991:142ff); see also Loporcaro (1998:155), who mentions that both Portuguese and Rumanian have undergone this development.

(5) a. Balan dʸ dʸugumbil baŋgul yaɣaŋgu balgan.
Woman-ABS man-ERG hit
'The man hit the woman.'
b. Badʸa ŋinguna balgan.
I-NOM you-ACC hit
'I hit you.'
c. Bay guna baŋgul yaɣaŋgu balgan.
I-ACC man-ERG hit
'The man hit me.'
d. Badʸa bayi yaɣa balgan.
I-NOM man-ABS hit
'I hit the man.'

Our analysis captures the connection between auxiliary-selection and split-ergativity by adopting some aspects of Müller's (2004) account of the nature of ergative case/agreement systems as we shall see in detail below.

In short, then, we wish to address the following questions in this paper:

(6) a. What is the connection between person-driven auxiliary selection and split-ergativity?
b. How does EA past participle agreement work, and why is it an exception to Belletti's generalization?
c. Why is the person-driven pattern absent in Germanic, while both the Italian-style pattern and the Spanish-style pattern are found?

We will now deal with each of these questions in turn. Although our data and analysis are almost entirely confined to EA, their wider relevance both for the analysis of Central-Southern Italo-Romance and for comparative syntax should be clear. Furthermore, as already mentioned, the fact that we make crucial use of certain technical devices recently proposed on independent grounds is of theoretical interest to the extent that our analysis can support those proposals. One thing which emerges, as we shall see, is an outline of a general account of auxiliary selection which works in all core cases, including EA as a representative of the Central-Southern Italo-Romance person-driven type of system.[5]

Before going on to the analysis, we need to introduce two technical points. First, we must clarify certain assumptions regarding the nature of features and their values. Following Chomsky (2001:5) we take formal features to be attribute-value pairs, e.g. "plural" is really [Num: Pl]. Here, the attribute "Number" is associated with the value "plural," hence this is a valued feature. Where the value is not specified, e.g. [Num:__], we have an unvalued feature. In these terms, we can think of Agree as an operation which copies a value into the feature-matrix. This can be formalised as follows:

[5]We will largely put to one side the question of the possible "decomposition" of the HAVE auxiliary into BE combined with some extra element, e.g. an abstract preposition, as influentially proposed by Freeze (1992) and Kayne (2000) (see also Cocchi 1995; Ledgeway 2000). We do not exclude this as a possible analysis of the relation between the two auxiliaries, but will extrapolate away from it here.

(7) In a well-formed Agree relation A of which $\alpha$ and $\beta$ are the terms, where $\alpha$'s feature matrix contains [$\text{Att}_i$:__] and $\beta$'s contains [$\text{Att}_i$: $\text{val}_j$], for some feature F = [$\text{Att}_i$: ($\text{val}_{\{\ldots,j,\ldots\}}$)], copy $\text{val}_j$ into __ in $\alpha$'s feature matrix.

Furthermore, we assume that underspecified features also have the form [$\text{Att}_i$:__], i.e. the blank matrix is also a feature value, filled in by general convention at an interface. Unvalued and underspecified features are formally identical; however, since underspecified features are valued at the interface by convention they will fail to satisfy Agree in the syntax (unless they enter into an Agree relation with a category which happens to be specified for a default feature value).

Second, we adopt the proposal in Chomsky (2008) that formal features may be inherited from a phase-head (e.g. C) by a non-phase-head (e.g. T); this, according to Chomsky, is how T gets the $\varphi$-features that make it a Probe (usually for the subject). Chomsky restricts his discussion to the relation between C and T, but he makes the following comment: "transmission of Agree features should be a property of phase heads in general, not just of C. Hence v* should transmit its Agree-feature to V" (2008). We will exploit a variant of this idea in our analysis of EA past participle agreement below.

With these preliminaries in mind, we can proceed to the analysis of the EA phenomena, starting with auxiliary selection.

## 2 Auxiliary selection and split ergativity

We begin by making certain rather simplistic assumptions regarding aspectual auxiliaries and auxiliary selection. First, we propose, essentially following and updating Ross (1969), that aspectual auxiliaries are merged in $v$ and select a $v$P headed by a participle of the relevant kind. For example, the structure of a simple English perfect $v$P would be as follows:

(8) a. John has spoken.
b. [$_{v\text{P}}$[$_v$ has ] [$_{v\text{P}}$ John [$_v$ spoken ] [$_{\text{VP}}$(speak) ]]]

As (8b) shows, we assume that the external argument of the main predicate is merged in the lower Spec,$v$P; this amounts to treating aspectual auxiliaries as a kind of raising predicate, again following Ross. Let us refer to the higher occurrence of $v$ as $v_{Aux}$. The auxiliary selects a $v$ specified as perfect (or whatever more primitive features the properties of perfects may derive from; see the papers in Alexiadou et al. 2003; Pancheva and von Stechow 2004); call this $v_{Prt}$ (for perfect participle). Movement of the verbal root to the $v_{Prt}$-position results in the root acquiring participial features and the realisation of this feature bundle as a past participle. These three properties of compound tenses (the fact that the auxiliary is a raising predicate, first merge of the external argument in the specifier of the lower $v$P, and incorporation of the verbal root V with the participial $v$ to form a past participle) we take to be common to all the compound tenses we will discuss here. They are fairly standard assumptions, put forward, in one variant or another, to much of the literature on the structure of compound tenses since Pollock (1989).

We now treat the realisation of the auxiliary as a question of the spell-out of features of the upper $v_{Aux}$ in the structure in (8b). The auxiliary can be realised either as HAVE or BE, depending on a range of factors. We leave aside the possibility that the complement of the auxiliary is more complex than we have indicated and, in particular, whether there is incorporation of an abstract prepositional element into the auxiliary, giving rise to the realisation of the auxiliary as HAVE (see Note 5). A consequence of this is that we need to specify how the structure in (8b) is able to express the relation between auxiliary HAVE and possessive and other occurrences (existential, modal, psychological) of HAVE. Although we largely limit our focus in this article to the formation of compound tenses, we do not want to exclude a wider ranging analysis of auxiliaries. Moreover, the evidence given by Manzini and Savoia (2005, III:1–34; 122ff) that some Italo-Romance varieties show person-driven auxiliary selection in these contexts too indicates that our analysis ultimately must be extended in this way. The natural move is to treat the complement of the higher $v$ as something other than $v$P in the "main-verb" cases. For example, the complement of an existential, possessive or psychological auxiliary may well be a small clause (see Jayaseelan 2007) and the complement to a modal a (defective) TP. We will put this question aside here and come back to these cases below.[6]

We take it that the realisation of the auxiliary takes place by means of post-syntactic lexical insertion, giving morphophonological realisation to the feature bundles created and manipulated by the syntax. In these simplified terms, we can state the conditions for the realisation of $v_{Aux}$ as HAVE or BE in terms of the nature of the $v$ it takes as its complement, as follows ($v^*$ denotes a non-defective $v$, one probing the direct object's $\varphi$-features and licensing the direct object's Case feature in virtue of having unvalued $\varphi$-features, as well as assigning an external thematic role to the subject (see Chomsky 2001:43); this is the sole occurrence of $v$ when no auxiliary is present:

[6] In EA possession is expressed using a distinct verb from the HAVE-auxiliary found in compound tenses, namely *tene'* ("to hold"):

(i) Tenghe na machene.
I-hold a car
'I have a car.'

Similarly, certain psychological predicates use *tene'*:

(ii) Tenghe paure.
I-hold fear
'I am afraid.'

Locative/existentials show *sta'* ("to stand/be"):

(iii) Dendre a la case ci sta ddu pirzone.
In to the house there are two people
'There are two people in the house.'

The similarities with Ibero-Romance are obvious. Where Standard Italian, French, English and many Italo-Romance varieties use forms of HAVE and BE, EA has four distinct verbs/auxiliaries. These facts indicate, in terms of the idea sketched in the text, that in EA $v_{Aux}$ is realised differently depending on the category it selects: some kinds of small-clause complement are selected by *tene'*, some by *sta'*, while the participial $v$P is selected by BE or HAVE.

(9) a. If $v_{Aux}$ takes $v^*_{\text{Part}}$ as its complement, $v_{Aux}$ is HAVE;
otherwise $v_{Aux}$ is BE (Standard Italian, German, etc.)

b. If $v_{Aux}$ takes $v_{\text{Part}}$ as its complement, $v_{Aux}$ is HAVE;
otherwise $v_{Aux}$ is BE (Spanish, English, Sicilian dialects, etc.)

c. If $v_{Aux,[3\text{Pers}]}$ takes $v_{\text{Part}}$ as its complement, $v_{Aux}$ is HAVE;
otherwise $v_{Aux}$ is BE
(EA and other Central-Southern Italo-Romance varieties)

(9) is not intended as an analysis, but as a preliminary set of generalisations. (9a) says that auxiliary $v$ is realised as HAVE when the $v^*$ it selects is non-defective, i.e. when $v^*$ Agrees with the direct object, and assigns an external $\theta$-role. So HAVE appears with transitives and unergative intransitives, assuming with Hale and Keyser (1993) the general presence of a cognate object in the latter case. BE appears in all other cases where the predicate is perfect.[7] This is the situation in Standard Italian, and, for example, in Dutch and German. (9b) is the simple case where there is no auxiliary selection in active compound tenses: perfect $v$ is always realised as HAVE. This is the situation in Spanish and English.

(9c) is the case we want to consider here. We can immediately note that the formulation of (9c) implies that $v$ is sensitive to the $\varphi$-features of the subject. This cre-

[7] Following Collins (2005), we take passives to involve a VoiceP. Mediopassive and impersonal *si* constructions may be treated in this way, or may involve a defective $v$ of some kind. BE is obligatory in these cases in Standard Italian:

(i) Si sono mangiati gli spaghetti.
SI are eaten the spaghetti
'The spaghetti has been eaten.'

(ii) Si è lavorato molto.
SI is worked much
'One has worked a lot.'

Cases like (i) are unusual and potentially problematic in that we have BE with a transitive verb and a completely standard internal argument. However, the reformulation of (9) given in (9′) below essentially restates (9a) as a one-way implication: If HAVE then an internal argument is licensed. This allows for the possibility of BE with a normally licensed internal argument, as here.

Reflexive *si* and impersonal *si* with a full transitive also require BE. These are much more problematic:

(iii) Gianni si è guardato allo specchio.
Gianni SI is looked-at at-the mirror
'Gianni looked at himself in the mirror.'

(iv) Li si mangia.
them SI eats
'One eats them.'

We make no suggestions for these cases here; see D'Alessandro (2007) on *si*-constructions.

We suspect that "true" passive constructions involve a VoiceP and a smuggled PartP, following Collins. Impersonal constructions mediated by a clitic such as *si*, or by a special suffix, instead involve some manipulation of the formal features of T or $v$, and what that may be may vary from language to language. These issues go far beyond the scope of this paper, however, which is primarily concerned with active perfect participles.

ates an analytic connection with the analysis of ergative case/agreement marking.[8] In terms of (9), HAVE is naturally seen as the marked option. There are in fact several reasons to think this. First, HAVE-auxiliaries are cross-linguistically rather rare; in Indo-European they are not found in Celtic or Slavonic (with the exception of Macedonian (David Willis, personal communication)), or in Hindi (Mahajan 1994), for example. Second, any context where HAVE is found corresponds to one where BE can be found in some other language, but not vice-versa. For example, HAVE is never, to our knowledge, the basic passive auxiliary (see Keenan 1985:257–261 for a discussion of the varieties of passive auxiliaries attested in the world's languages, which notably does not include HAVE). On the other hand, there are languages, including many Slavonic and all Celtic languages, as well as certain Central-Southern Italo-Romance varieties mentioned above, where BE appears in the perfect in all tense-person-number combinations and with all verbs. We might therefore consider BE to be the default auxiliary. Accordingly, all we need to do in order to give an account of auxiliary selection is specify the context where HAVE is merged, as in (9). In fact, we can restate (9) along the following lines:

(9′) a. HAVE can only select a $v$ which licenses an internal argument.
b. HAVE can only select a $v$ which does not license the external argument.
c. HAVE is insensitive to argument structure.

(9a′) refers to the fact that in these systems HAVE appears in all cases other than those where the main verb (i.e. the participial $v$ selected by HAVE) is an unaccusative, passive or raising verb, i.e. where it cannot license an internal argument (still assuming that unergative intransitives license a cognate object as their internal argument—see Hale and Keyser 1993); where HAVE does not appear, BE does, and hence in systems of this type we see the familiar split in auxiliary selection between unergative and unaccusative intransitives. (9b′) excludes HAVE as the passive auxiliary in general; here the external argument is arguably licensed by $v$ and therefore HAVE cannot appear (Collins 2005 treats this argument as licensed by Voice; the choice of auxiliary, at least in case (9b/9b′) has to make reference to VoiceP if his analysis of passives is adopted). (9c′) refers to the case where the $\varphi$-features of $v$ license the external argument, as we shall see in more detail directly. To the extent that ergative case/agreement marking involves licensing of the external argument by $v$, as Müller (2004) proposes (a proposal we describe in detail below), the generalisation regarding HAVE across all three cases of (9) seems to be that it is a morphological realisation of non-ergativity, an "anti-ergative" auxiliary.

In fact, we can maintain the following regarding auxiliary-selection generally:

[8] We can further note that if 3rd person is really the lack of Person, as originally proposed by Benveniste (1966) and taken up by a variety of linguists more recently (see for example Déchaine and Wiltschko 2002; Kayne 2000, 2005; Manzini and Savoia 2005, and below), then (9c) should be stated in terms of $v_{Aux}$ with an unvalued, underspecified [Person] feature, rather than a [3Pers] feature. In these terms, systems which combine person-driven auxiliary selection with argument-structure driven selection in the 3rd person, mentioned at the end of Sect. 1.2, can be seen as a combination of (9a) and (9c), in that the combined systems allow $v_{Aux}$ with an unspecified Person feature to have distinct realisation according to whether it selects $v^*$ or not. We will make a more precise claim regarding the nature of unspecified features below.

(10) a. BE appears iff all the features of $v$ Agree with the external argument.
b. HAVE appears iff all the features of T Agree with the external argument.

We will see directly how (10) applies to EA. We can note further that it accounts for the cross-linguistically absolute ban on HAVE as the passive auxiliary, if we assume that $v$ licenses the external argument in passives. Collins (2005:103–104) argues that Voice plays this role, but it is plausible that, on an approach such as his, Voice heads the internal phase, and as such would be equivalent to $v$ as we have identified it here; see Roberts (2008). We can also account for the variation in possessive, existentials and psychological predicates by assuming, as mentioned earlier, that in all these cases the auxiliary has a small-clause complement. HAVE arises when the subject raises from that complement, BE when either nothing raises or the predicate does. Schematically, starting from a first-merged structure like (11), we derive (12) from the two logical possibilities of raising from inside the SC complement to $v_{Aux}$:

(11) $v_{Aux}$[SC XP YP ]

(12) a. XP $v_{Aux}$[SC (XP) YP ]
b. YP $v_{Aux}$[SC XP (YP) ]

Our proposal is that $v_{Aux}$ is realised as HAVE in (12a) and as BE in (12b). Thus, for example, in possessives, XP is the possessor; in existentials the locative expletive, and in psychological predicates the experiencer. Using English morphemes, then, we have the pattern in (13) where HAVE is the auxiliary (see Jayaseelan 2007 and the references given there):

(13) a. I have [ (I) a car ].
b. There has [ (there) a man ].
c. I have [ (I) hunger/love for Mary ].

Where YP raises, $v_{Aux}$ is realised as BE, giving:

(14) a. A car is to/with [ me (a car) ].
b. A man is [ there (a man) ].
c. Hunger is to/with [ me (hunger/love for Mary) ].

(In case-rich languages, the preposition given as "to/with" here is realised as dative case; of course the fact that a preposition or oblique case appears with BE but not with HAVE favours the idea that HAVE consists of BE+P, as proposed by Freeze 1992 and Kayne 2000.)

Ultimately, the generalisation is the following:

(15) If the lowest licensing head licenses XP, $v_{Aux}$ is realised as BE.

(Again, (15) is obviously compatible with the Freeze/Kayne approach to auxiliary selection.) Finally, we can observe that there is variation with unaccusatives since it is precisely here that there is no external argument, i.e. no element corresponding to XP in (11), and so languages make an arbitrary choice of auxiliary.

The above sketch leaves open many details regarding the "main-verb" (possessive, existential, psychological) cases of auxiliaries, but seems to provide a simple enough

general account of auxiliary selection. As we have seen, the EA facts fit into it very well.

Returning to EA, let us look again at the structure of compound tenses given in (8b) above, in order to see more precisely how person-driven auxiliary selection works:

(16) [$_{vAuxP}$[$_{vAux}$ has ] [$_{vPrtP}$ John [$_{vPrt}$ spoken ] [$_{VP}$ (speak) ]]]

If $v_{Aux}$ holds unvalued Person features, then Agree between the external argument and the auxiliary can take place and value the external argument's Case feature. This is the core idea in our account of person-driven auxiliary selection, which we will now develop in more detail.

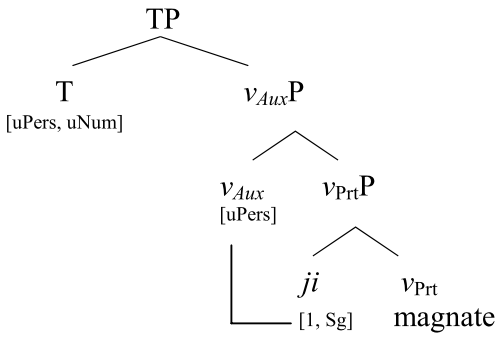
Our central assumption, then, is that $v_{Aux}$ in EA has an unvalued Person feature. In terms of the notation introduced above, $v_{Aux}$ is specified as [Pers:__] in EA. We further assume, following the references given in Note 8, that 3$^{rd}$ person is the unmarked Person feature, and hence the interpretation which arises either if there is no Person feature on a DP, or if the Person feature remains unvalued (i.e. this is the value which is filled in by convention at LF). The assumption that $v_{Aux}$ has [Pers: __] is the central assumption required to derive the auxiliary-selection facts of EA, as we will now try to show. We can take this to be a microparametric property of $v_{Aux}$, since it consists in the postulation of a formal feature of this category in this variety.

In the light of our assumptions, let us now consider the various cases of interaction of auxiliary selection and the Person/Number features of the subject. Consider first the case of a 1sg subject, as in (17):

(17) Ji so' magnate.
I am eaten-sg
'I have eaten.'

The structure of the relevant parts of this example is given in (18):

(18)




Here $v_{Aux}$ Agrees for Person with the external argument, and thereby values its Person feature (as 1) and the external argument's Case feature (note that we are assuming that Case valuation does not require $\varphi$-completeness; the Person feature is sufficient here). In this situation, following (9c′), $v_{Aux}$ must be realized as BE. T Agrees for Num with the external argument, valuing its feature as Sg. We assume that $v_{Aux}$ does not act as an intervener for this Agree relation since $v_{Aux}$ lacks a Num feature. Further,

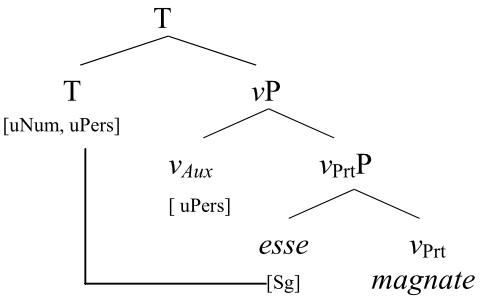
we assume that T's Person feature can be valued by that of $v_{Aux}$, once the latter has been valued (see Bejar and Rezac 2009 for further cases of this kind). Both before and after valuing, $v_{Aux}$ and T match for the Person feature.

Consider next an example where the external argument is 3rd person:

(19) Esse a magnate.
he/she has eaten
'He/she has eaten.'

Here the relevant parts of the structure are as follows:

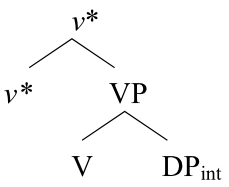
(20)




The DP *esse* has no Person feature. There is nothing novel in this assumption itself; the idea that the 3rd person is really "no person" goes back to Benveniste (1966), and has been exploited by various people in the literature on Italian dialects (see, among others, Manzini and Savoia 2005, 2007; Poletto 2000). Its Case feature is valued by Agree with T's Num feature, exactly as in (18); here too, then, T Agrees for Num with the external argument, valuing its feature as Sg. The value of the Person features on both T and $v_{Aux}$ is filled in by default, presumably at LF. Therefore, in this structure $v_{Aux}$ does not probe the external argument and so, by (9c′), is realised as HAVE. So here feature-matching takes place, although vacuously for the Person feature on T and $v_{Aux}$; in terms of the formulation of Match given in (7), the "value" copied is the blank feature. In this case, since Match has taken place, we assume that the feature is able to be assigned by default at the interfaces (both PF and LF, since morphophonology and semantics must be able to interpret it).

We are now in a position to see the connection with split-ergativity, as analysed by Müller (2004). Müller proposes that the "ergative parameter" arises from the indeterminacy of operations at the $v$-cycle. Consider what happens when the derivation reaches the stage indicated in (21):

(21)




At this point in the derivation, since we have non-defective, transitive $v^*$, the external argument $DP_{ext}$ is available for merger and the internal argument, $DP_{int}$, is an

active Goal for Agree with $v^*$, an active Probe. As Müller points out, there is no intrinsic ordering amongst these two operations. As far as UG is concerned, then, two possibilities now arise, as indicated in (22):

(22) (i) Agree($v^*$, $DP_{int}$) > Merge($DP_{ext}$, $v^*$)
(ii) Merge($DP_{ext}$, $v^*$) > Agree($v^*$, $DP_{int}$)

Where Agree precedes Merge, as in (22i), $v$'s Case/agreement properties appear on the internal argument $DP_{int}$ and the external argument $DP_{ext}$ must therefore be licensed in a different way, e.g. by T. This gives rise to a nominative-accusative case-agreement pattern of the type found in English and other familiar languages. On the other hand, where Merge precedes Agree, as in (22ii), $v$'s Case/agreement properties are realised on the external argument, $DP_{ext}$,[9] and the internal argument $DP_{int}$ must be licensed in a different way, e.g. by T. This gives rise to an ergative-absolutive case-agreement pattern. The clearest difference between the two systems arises in the case of unergative intransitives. Here there is no (overt) internal argument, and therefore presumably no active goal in VP. In the nominative-accusative system, $v$ has no $\varphi$-features in this case, and T licenses the external argument exactly as in a transitive clause. In the ergative-absolutive system, $v$ is unable to license the single argument because it lacks $\varphi$-features, and so T licenses it, with therefore the same case/agreement pattern as appears on the object of a transitive (the absolutive).[10]

So the ergative case/agreement pattern, found with transitive verbs in systems of type (22ii) according to Müller, arises in cases where $v$ licenses the subject. According to us, this is what is common to ergative case/agreement systems and "person-driven" auxiliary selection. If the above analysis of EA is right, the central property of this system is the fact that $v_{Aux}$ has an unvalued Person feature, and thus probes the external argument. Furthermore, Müller makes the following speculative comment on split-ergativity: "I surmise that [person-based split ergativity—the authors] can successfully be tackled by invoking language-specific restrictions on CASE feature instantiations on $v$" (Müller 2004:12). Since Müller (2004:5) uses the notation "CASE" to mean agreement-marking on the Probe, our account of auxiliary-selection in EA ties in exactly with this conjecture: Abruzzese, unlike Standard Italian, has a language-specific instantiation of agreement on the Probe: the unvalued Person feature of $v_{Aux}$.

Person-driven auxiliary-selection is not found in all compound tenses in EA. In the subjunctive, for example, only HAVE is found as the auxiliary (independently of argument structure):

[9] Müller (2004:4) assumes that Agree takes place under m-command, along with a specific computation of closeness such that the external argument in the specifier of $v$ is closer to $v$ than the internal argument contained in the complement of $v$ (see his Note 8). Neither of these assumptions is necessary for our analysis of EA.

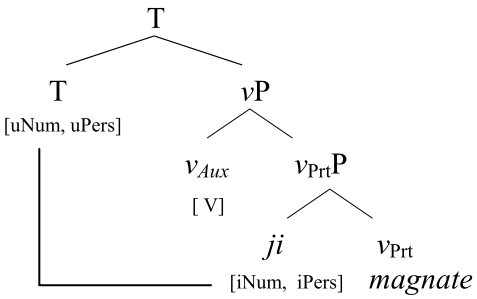
[10] Müller's (2004:10–11) presentation of what happens in intransitives is slightly more complex as it aims also to account for the type of split-ergativity known as an "active" system, in which the single argument of an unaccusative intransitive is absolutive while that of an unergative is ergative (as in Basque). We leave this complication aside here.

(23) a. ji avesse fatte ('I would have done,' etc.)
tu avisse fatte
esse avesse fatte
nu avesseme fitte
vu avessete fitte
jisse avesse fitte

b. ji avesse jite ('I would have gone,' etc.)
tu avisse jite
esse avesse jite
nu avesseme jite
vu avessete jite
jisse avesse jite

We must assume that subjunctive T (or perhaps a distinct Mood functional head) selects a $v_{Aux}$ which lacks the Person feature. In that case, T, being [uPers, uNum] has sufficient $\varphi$-features to license the subject in the usual way. The structure is as in (24):

(24)




Here there is no sensitivity to the person of the subject as the relevant $\varphi$-features are associated with T, not with $v_{Aux}$. If the subject is 3rd person, then T's [uPers] feature is filled in by the usual convention for underspecified Person features at LF.

According to Manzini and Savoia (2005, II:729), the kind of situation just described for EA is quite common: they observe that the majority of dialects which show person-driven auxiliary selection in the present perfect do not show it in the pluperfect or in counterfactual tenses, either HAVE or BE being consistently found here. We interpret the occurrence of HAVE in this context as indicating that the presence of $\varphi$-features on $v_{Aux}$ is determined by the mood features of T (or, as mentioned above, by the presence of an intervening Mood head).[11] It is worth noting in this context that HAVE appears to have been favoured in irrealis contexts in systems of argument-structure driven auxiliary selection; this is observed by Ledgeway (2003, 2009) for Old Neapolitan and by McFadden and Alexiadou (2006) for Middle English

[11] EA has two other tenses that are worth mentioning here. The future perfect, which only has an epistemic modal meaning, is restricted to the 3rd person: *esse l'averrà fatte* ('she must have done it'), *jisse l'averrà fitte* ('they must have done it'). The pluperfect shows a combination of BE and HAVE (in that order):

(they also mention Middle Dutch, Middle Low German and Old Swedish; McFadden and Alexiadou (2006:255)).[12]

In terms of our analysis, then, the fundamental property which gives rise to a person-based auxiliary-selection system is the presence of Person features on $v_{Aux}$. The $v_{Aux}$ of EA has these features, unlike Standard Italian, English and other languages, where an auxiliary merged in $v$ combines with Person features in T. Because of this, and the basic configuration for Agree, $v_{Aux}$ is able, under the right conditions, to Agree with the external argument. This provides the answer to the first question raised in the Introduction: the connection between person-driven auxiliary selection and split ergativity lies in the fact that in both cases $v$, not T, Agrees and case-licenses the external argument in certain persons.

## 3 Past participle agreement in EA

In this section, we will analyse the pattern of participle agreement in EA illustrated in (2) and (3) above, and repeated here:

(2) a. Giuwanne a pittate nu mure.
**John-sg** has-3rd sg/pl painted-**pp sg a wall**
'John has painted a wall.' [sg SUBJ-sg OBJ]

b. Giuwanne a pittite ddu mure.
John-sg has-3rd sg painted-**pp pl two walls**
'John has painted two walls.' [sg SUBJ-pl OBJ]

c. Giuwanne e Mmarije a (*pittate)/pittite nu mure.
**John and Mary-pl** have-3rdsg/pl **painted-pp(sg)/pl** a wall
'John and Mary have painted a wall.' [pl SUBJ-sg OBJ]

d. Giuwanne e Mmarije a (*pittate)/pittite ddu mure.
John and Mary-pl have-3rd sg/pl **painted-pp(sg)/pl** two walls
'John and Mary have painted two walls.' [pl SUBJ-pl OBJ]

(3) Giuwanne e Mmarije l'a pittite, (lu mure).
John and Mary-pl it-sg-have painted-pp pl, the wall
'John and Mary have painted it, the wall.'

Recall that the basic generalisation is that the past participle will agree in number with any plural argument. This contradicts Belletti's (2005) generalisation that external

(i) ji so' 've ditte ('I had said', literally 'I am had said')
tu sive ditte
esse ave' ditte
nu saveme ditte
vu savete ditte
jisse ave' ditte

See D'Alessandro and Ledgeway (2010) for an analysis of these forms.

[12] Ledgeway (2003:26) points out that ergative-absolutive case/agreement marking is disfavoured in irrealis contexts in various languages, citing Dixon (1994:97–101). This is in line with our general speculative characterisation of HAVE as the "anti-ergative" auxiliary.

arguments do not trigger participle agreement. Our account of participle agreement makes it independent from person-driven auxiliary selection, which is empirically correct, as observed by Manzini and Savoia (2005, II:681ff) and by Legendre (2010).

### 3.1 Two preliminaries regarding EA morphology

Here we clarify two points concerning the nature of the past participle morphology in EA.

First, past participles in this variety of EA do not show gender inflection, but only number inflection. Other varieties of EA, particularly more conservative ones, do show gender agreement, however; e.g., Guardiagrele. Here we will concentrate on the Arielli variety, where this distinction has been lost.

The second point concerns the way in which participle agreement is realised. This takes place by means of the morphophonological process known as metaphony in traditional dialectological work, a process which is very widespread in Italian dialects (see Maiden 1991 for an overview). In EA, the final vowels of participles and other inflected words are reduced to schwa, but some inflectional distinctions formerly carried by these vowels are carried by height alternations in stem-internal stressed vowels (this is presumably the reflex of an earlier process of vowel harmony triggered by the final vowel before its reduction to schwa; Savoia and Maiden 1997:15). This process is pervasive in EA, as in many Central-Southern Italo-Romance varieties. Here we give examples of number marking in nouns, pronouns and adjectives, as well as past participles:

(25)

| | SG | | PL | |
|---|---|---|---|---|
| a. | lu | t**o**ne | li | t**u**ne |
| | the-sg | thunder-sg | the-pl | thunders-pl |
| b. | **e**sse | jè bb**e**lle | **ji**sse | jè bb**i**lle |
| | (s)he-sg | is beautiful-sg | they-pl | are beautiful-pl |
| c. | ji so’ | magn**a**te | vu sete | magn**i**te |
| | I-sg am | eaten-sg | you-pl are | eaten-pl |

Thus, we see a vowel alternation within the stem (*-a* (sg)/*-i* (pl), *-e*/*-i*, *-o*/*-u*), rather than in the ending, as is the case in Standard Italian.[13]

### 3.2 Analysis

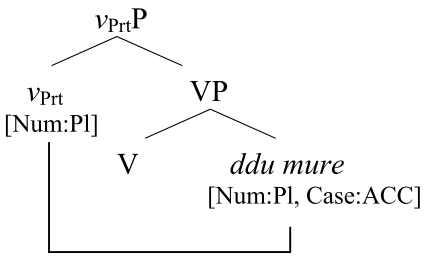
Consider first the case where the subject is singular and the direct object is plural:

[13] A reviewer asks whether there are cases of past participle agreement of the EA kind which express the agreement through an inflectional ending rather than through metaphony. We are not aware of any such cases, although we suspect that, given the origins of metaphony in vowel harmony (followed by final-vowel neutralisation), there must have been stages of some of these dialects where past participle agreement involved both phenomena together.

(26) Giuwanne a pittite ddu mure.
John-sg has-3rd sg painted-**pp pl two walls-pl**
'John has painted two walls.'

Here the past participle agrees with the direct object. We propose that $v_{\text{Prt}}$ bears unvalued Number-features and so probes the object inside VP. The relevant parts of the structure are as follows:

(27)




There is an Agree relation between $v_{Prt}$ and the direct object which values the Number feature of $v_{Prt}$ as Plural and the Case feature of the object as Acc.[14]

[14]Here the question arises as to what prevents this form of agreement between the past participle and the direct object in Standard Italian. This point is dealt with by D'Alessandro and Roberts (2008) in terms of the idea that the participle occupies a higher position in Standard Italian than it does in EA, with the consequence that the participle and the direct object are not in the same spell-out domain at PF and hence are unable to realise the Agree relation morphophonologically. Evidence that the participle is in a higher position in Standard Italian than in EA comes from contrasts like the following, where we see the participle following the adverb *poche* ("(a) little") in EA but obligatorily preceding the corresponding adverb *poco* in Standard Italian:

(i) a. Le so **poche capite**
it am-1st sg little understood
b. ???L'ho poco capito
it-have-1st sg little understood
c. L'ho capito poco
it-have-1st.sg understood little
'I understood it little'

Cinque (1999:11) situates *poco* in the same position as *molto* and *bene* in his hierarchy, in the lowest, immediately VP-external, adverb position. However, he notes Cinque (1999:173, Note 31) that there are some reasons to believe that the measure adverbs *molto* and *poco* may be situated higher than *bene*. The Abruzzese data confirm this since the equivalent of *bene* cannot precede the participle while *poche* can.

D'Alessandro and Roberts (2008) propose the following principle governing the overt realisation of Agree relations:

(ii) Given an Agree relation A between Probe P and Goal G, A has morphophonological realisation as agreement between P and G iff P and G are contained in the complement of the minimal phase-head H.

(iii) XP is the complement of a minimal phase head H iff there is no distinct phase head H' contained in XP whose complement YP contains P and G.

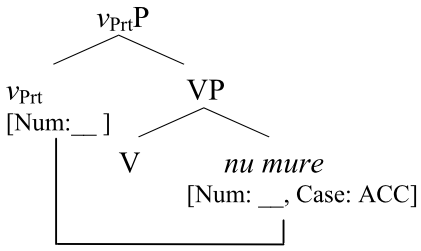
(ii) and (iii) effectively state that morphophonological agreement, like many other phonological processes, takes place within the complement to a phase head, i.e. the substructure which is transferred to PF as a single unit. In Standard Italian, the participle raises to a position outside the substructure containing the

Consider next what happens if we have a plural subject and a singular object. Here, as we saw in (2c), the past participle agrees with the subject.

(28) Giuwanne e Mmarije a pittite nu mure.
**John and Mary-pl** have-3rd sg/pl **painted-pp pl** a wall
'John and Mary have painted a wall.' [pl SUBJ– sg OBJ]

The $v_{Prt}$P in (28) is as follows (cf. (27)):

(29)




Here, as in (27), $v_{Prt}$ probes the direct object. However, Singular is plausibly the unmarked value of the Number feature, so the Number feature on the object *nu mure* is underspecified. As such, we propose, it is unable to value $v_{Prt}$'s Number feature in (28).[15] This may be the reflection of a more general feature hierarchy, which, in EA, interacts with agreement. The generalisation may be that agreement holds only with the most prominent value of a given feature; in the case of Number, this is plural. The use of the formally underspecified blank feature value in (27) and elsewhere in this paper is an attempt to capture this intuition.

Now, as we have already mentioned, Chomsky (2008) proposes that feature-copying from a phase-head to the functional head it selects is possible. We can exploit this idea in order to account for the fact that the participle agrees with the subject

direct object and hence the two do not overtly agree (although $v$ Agrees with the direct object in the usual way); literary registers of Italian and some regional varieties do show object-agreement with participles; see the discussion in D'Alessandro and Roberts (2008, Note 4). In EA (and presumably a number of other Central-Southern varieties where general participle agreement with direct objects is observed), the participle remains in a sufficiently "low" position for overt agreement to be allowed by (ii). It seems that movement to the head immediately above the lowest functional head—the one specified by *bene* according to Cinque (1999)—is enough to take the participle out of the domain in which the Agree relation with the direct object can be morphologically realised according to (ii) and (iii). In other words, given the substructure *W poco X bene Y VP*, X and Y are contained in the same spell-out domain as VP but W is not (and the rest of hierarchy is presumably outside the $v$P phase).

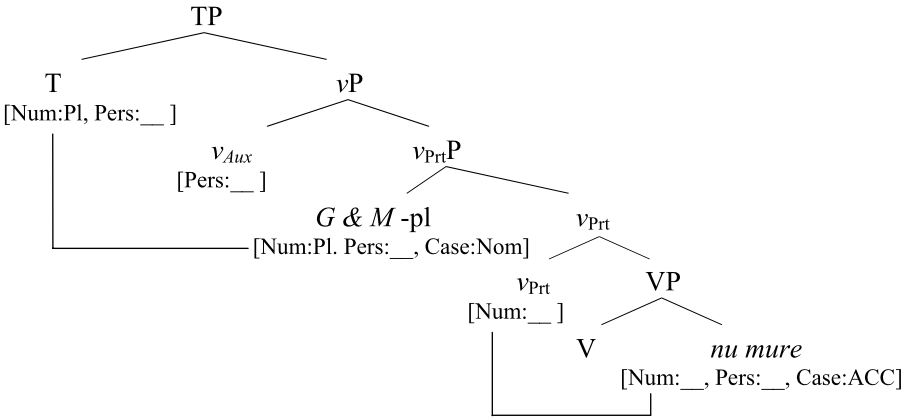
[15]Gender agreement may arise here, if $v_{Prt}$ has gender features (as it does in Standard Italian). Manzini and Savoia (2005, II:747) give the following examples:

(i) a. Nu semmə kuətətə / kɔtta la paʃta
we BE-3pl cooked-m.pl./ cooked-f.sg. the pasta-f.sg
'We have cooked the pasta.' [Roccasicura]
b. setə kuətətə / kɔtta la mɛnʃətrə
BE-2pl cooked-m.pl./ cooked-f.sg. the soup-f.sg
'You have cooked the soup.' [S. Vittore]

Recall that EA has no gender agreement.

in (28). The simplest thing, and most in line with Chomsky's conjecture quoted in Sect. 1, would be to say that the Pl-value of Num is copied from $v_{Aux}$ to $v_{Prt}$ in (28), with the result that the participle shows plural agreement. However, we saw in our discussion of auxiliary selection in Sect. 2 that $v_{Aux}$ has no Number feature. The feature must therefore have come from T, as shown in (30):

(30)




Here, the T Agrees with the subject, with the result in this example that Person and Number are valued on the auxiliary and Case on the subject. In this way, T has a valued Number feature which it is then able to transmit to $v_{Prt}$. As a result of this, $v_{Prt}$ shows up as plural.[16] The feature-copying from T to $v_{Prt}$ is not an Agree relation, and hence this relation is not subject to the condition on morphophonological realisation of Agree in (ii) of Note 14 (D'Alessandro and Roberts 2008, Note 7, observe that the same seems to be true of complementiser agreement in Germanic and anti-agreement effects in Berber—see Ouali (2008) for a similar proposal of feature sharing).

However, there is a problem with this proposal for (28). Inheritance of features from T to $v_{Prt}$ implies that feature spreading is not restricted to the features of $v_{Aux}$, and in fact may not involve this position at all. If $v_{Aux}$ is indeed the head of the "internal phase," then the feature spreading is not restricted to a single phasal domain. To solve this problem, we invoke Gallego's (2006) notion of "phase sliding." Gallego (2006:26) proposes that when $v$ moves to T it causes the phase boundary to be "pushed up" to T. This is because $v$-to-T is a case of syntactic head-movement which gives rise to "reprojection" when $v$ combines with T "creating a hybrid label from which all operations are triggered" (Gallego 2006:15–16). Most importantly for our purposes, this means that "all the phase phenomena that must occur within the $v^*$P domain are postponed to the $v^*$/TP domain" (Gallego 2006:16). Hence, movement

[16] We are assuming that $v_{Aux}$ is the phase head. If the lower phase of the clause is the category corresponding to the eventuality expressed by the arguments and the predicate, then this seems justified. It is possible that this is the position immediately above the head whose specifier hosts *poco*, i.e. W in Note 14 (although auxiliaries must be merged higher in Standard Italian, since the participle moves over *poco*, as we saw above).

of the auxiliary to T extends the $v$ phase and therefore allows feature inheritance from T to $v_{Prt}$ within what is now a single phase.[17]

It is necessary to assume that feature-valuation and feature-inheritance take place before transfer, where the feature in question is specified for a given value. This is what we have just seen in the derivation of (28); here [Num:pl] is passed from T to $v_{Prt}$. We assume that in (2a,b) the unvalued feature [Num:__] is passed. In (2d), where both the subject and the direct object are plural, [Num:Pl] is passed, and this Agrees with the same value for this feature on the direct object. In (2a), where the unvalued feature is passed and the direct object also has the unvalued feature, we assume that the feature is valued as singular by default. Default valuation of this type is only possible where both the Probe and the Goal bear exactly the same unvalued features. In the case of $v_{Prt}$ in (2a), the unvalued Num feature is present both on $v_{Prt}$ and on the object. As we saw in Sect. 2, feature-matching takes place, although vacuously (in terms of the formulation of Match given in (7), the "value" copied is the blank feature). In this case, since Match has taken place, the feature is able to be assigned by default at the interfaces (both PF and LF, since morphophonology and semantics must be able to interpret the feature).[18]

Manzini and Savoia (2005, II:687ff) observe that systems with the combination of properties we observe for EA are found elsewhere in Central-Southern Italy, in the dialects of Canosa Sannita, Tufillo, Secinaro and Torricella Paligna. Our proposal for the difference between EA, presumably along with these other varietes, and Standard Italian is that in EA, $v_{Prt}$ never has an intrinsic Number feature; this feature is always "inherited" in the manner just described. In Standard Italian, on the other hand, there is no inheritance as $v_{Prt}$ has its own Num feature. Object agreement in EA is overt owing to the fact that the participle does not move out of VP's spell-out domain, given the proposals in D'Alessandro and Roberts (2008) summarised in Note 16.

So we now have an answer to question (6b) above: past participle agreement in EA does not conform to Belletti's (2005) generalisation owing to the operation of feature inheritance in the lower phase of the type predicted by Chomsky (2008), combined with Gallego's (2006) proposal for phase-sliding.

## 4 Null subjects and person-driven auxiliary selection

In this section, we want to develop an account of the relation between person-driven auxiliary selection and null subjects, pointed out in Kayne (2000:127). If we can establish an implicational relation between these properties, then we can explain the lack of person-driven auxiliary selection in Germanic which we observed in the Introduction.

[17] There is an obvious connection between phase-sliding and Baker's (1988) Government Transparency Corollary. Both proposals capture what appears to be a general fact that head-movement extends the domain of various morphosyntactic processes. Chomsky's (1993) concept of equidistance also captures this, among other things.

[18] Participle agreement with the subject is also possible in the pluperfect subjunctive, where the auxiliary is always HAVE: cf. *esse avesse fatte, nu avesseme fitte* in (17). Recall that we have assumed that $v_{Aux}$ does not have the Person feature when T is subjunctive. Here again phase-sliding is required.

The first point is to establish that the correlation holds as a matter of fact. As we have already pointed out, as far as we are aware there are no Germanic varieties with person-driven auxiliary selection. It is also generally held that no Germanic language has (referential) null subjects. However, a reviewer points out that there are some Northern Italian dialects which show person-driven auxiliary selection. As is typical for Northern Italian dialects, these varieties have subject clitics. Hence the question arises as to whether these varieties are genuine null-subject languages or not. Two of these varieties are illustrated in (31) (we illustrate with unergative intransitives):

(31) a. Cerano:

| | |
|---|---|
| sum/i ɔ drumi | 'I am/have slept' |
| tɛ drumi | 'You(sg) are slept' |
| l ɛ drumi | 'He is slept' |
| (i) suma/i uma drumy | 'We are/have slept' |
| si/i i drumy | 'You(pl) are/have slept' |
| i in drumy | 'they are slept' |

b. Masserano:

| | |
|---|---|
| i u durmy | 'I have slept' |
| at ɛ durmy | 'You(sg) are slept' |
| al a durmy | 'He has slept' |
| i uma durmy | 'We have slept' |
| i ei durmy | 'You(pl) have slept' |
| ai aŋ durmy | 'They have slept' |

(Manzini and Savoia 2005, III:10–12)

Although both of these varieties have subject clitics, in both cases the paradigms are defective. The paradigm in Cerano has gaps and syncretisms, as (31a) shows, while that of Masserano has syncretisms among the subject clitics, as (31b) shows. This is confirmed by what we observe in simple tenses. Here Cerano in particular shows a great deal of syncretism:

(32) a.

| | |
|---|---|
| i drøma | 'I sleep' |
| a t drøma | 'you(sg) sleep' |
| a drøma | 'he sleeps' |
| i drumuma | 'we sleep' |
| i drumi | 'you(pl) sleep' |
| i drømu | 'they sleep' |

(Manzini and Savoia 2005, I:95)

b.

| | |
|---|---|
| i dɔrm | 'I sleep' |
| at dɔrmi | 'you sleep' |
| al/la dɔrm | 'he/she sleeps' |
| durmuma | 'we sleep' |
| i dɔrmi | 'you sleep' |
| a dɔrmu | 'they sleep' |

(Manzini and Savoia 2005, I:98)

As Rizzi (1986b) pointed out, gaps in subject-pronoun paradigms are extremely rare, but they are common in agreement paradigms. This is natural if we think of subject

pronouns as bearing interpretable, valued $\varphi$-features while agreement marking is a morphological reflex of uninterpretable, unvalued features. The complete paradigm of interpretable features must be realised, ultimately for functional reasons, while there is no constraint on the realisation of uninterpretable features. Hence we find consistent patterns of subject pronouns in very many languages, from Chinese to English to Italo-Romance, while agreement marking varies across the whole spectrum from no realisation, through partial realisation to "full" realisation. These varieties also show the fairly common Northern Italian pattern of syncretism both of subject clitics and agreement, but these syncretisms are complementary: Taken together, the combination of the subject clitics and agreement usually distinguishes all six persons (see Poletto 2000 for further discussion); if we allow for one syncretism, we find that the clitic and agreement marking together always distinguish five persons. For example, Garessio (Manzini and Savoia 2005, I:100) and Pinzano (Manzini and Savoia 2005, I:101) have a "complementary" system which makes five distinctions. These considerations argue quite strongly in favour of treating the subject clitics as agreement markers, following, among many others, Rizzi (1986b) and Poletto (2000) (but see Manzini and Savoia 2005 for a different view).[19]

Another Northern dialect with person-driven auxiliary selection and subject clitics is Grumello. This variety also shows gaps and syncretisms in its clitic paradigm, as well as complementarity with agreement endings (see Manzini and Savoia 2005, I:144). Furthermore, this variety shows at least partial obligatoriness of subject clitics in coordination contexts, a further argument that the subject clitic is really an agreement marker (see Poletto 2000:16ff for detailed discussion of this test)—see (33a). Finally, it tolerates a negatively quantified subject co-occurring with the clitic, indicating that the subject is not in a left-dislocated or topicalised position, but in the canonical subject position—see (33b):

(33) a. majdʒe e bie 'I eat and (I) drink'
ta majdʒet e ta biet 'you eat and (you) drink'
al majdʒa e l bi:f 'he eats and (he) drinks'
a m majdʒe e m bi:f 'we eat and (we) drink'
majdʒei e biih 'you eat and (you) drink'
i majdʒea e i bi:f 'they eat and (they) drink'
(Manzini and Savoia 2005, I:152)

b. nigy i ve 'no one he comes'
(Manzini and Savoia 2005, I:62)

[19] In this context, it is worth pointing out that only one of the 180 Italian dialects reported by Manzini and Savoia (2005, I:72–117) has exactly the French pattern of partial syncretism in the verb endings and total differentiation of the subject pronouns (with the pronoun in proclisis, and leaving aside the verb-second Rhaeto-Romanisch varieties): Soglio (Manzini and Savoia 2005, I:371); this is of course the typical pattern of non-null-subject languages (e.g. English, German, etc.). This is arguably a further indication that Northern Italian dialects are different from French in this respect, and in fact that the former are consistent null-subject languages while the latter is not. In enclisis environments, the situation is very different, as the data set in Manzini and Savoia (2005, I:360–370) shows; this type of difference between proclisis and enclisis environments has been observed since Renzi and Vanelli (1983). See Roberts (2010b) for further discussion.

We would like to point out that Manzini & Savoia draw the opposite conclusion from the Grumello data. In Standard French, whose subject clitics are true pronouns, and which consequently is not standardly regarded as a null-subject language (Kayne 1984; Rizzi 1986b, but see Sportiche 1999 for a different view), negatively quantified subjects are impossible with a subject clitic and subject pronouns may be dropped under coordination:

(34) a. *Personne il ne fait cela.
no one he neg does that
b. Il mange et boit.
he eats and drinks

The contrast between the behaviour of the subject clitics in Grumello and Maserrano on the one hand and French on the other indicates that the subject clitics in the former varieties have a different syntactic status from those of French. If we treat the Grumello/Cerano/Masserano subject clitics as agreement markers, and those of French as (weak) pronouns, this is accounted for. If the subject clitics in Grumello-Cerano-Masserano are agreement markers, then these languages are null-subject languages, and so the generalisation regarding the relation between person-driven auxiliary selection and null subjects can be maintained. (Although it is of course true that these and other varieties deserve closer investigation, and that this will no doubt reveal that these and other tests intended to distinguish subject pronouns from agreement markers are subject to various qualifications.)

In EA, as in all other Central and Southern varieties, there is no doubt at all as to the null-subject status of the language. There are no subject clitics,[20] and pronominal

[20] D'Alessandro and Alexiadou (2006) discuss the arbitrary subject pronoun *nome* (roughly "one"), which shows some clitic-like properties. It must appear between the auxiliary and the participle in the perfect tense:

(i) A nome magnite.
has NOME eaten-pl
'People have eaten.'

(ii) *Nome a magnite.
NOME has eaten-pl.

Interestingly, *nome* precedes BE. We cannot show it precedes BE in the perfect, since it is 3rd person, but we see the order *nome*—BE in predicative contexts and in passives, as in (iii) and (iv):

(iii) Nome jè bille.
NOME are nice-pl
'People are nice.'

(iv) Nome jè trattite male.
NOME are treated-pl badly
'People are treated badly.'

D'Alessandro and Alexiadou (2006) argue that *nome* is a weak pronoun in SpecTP. In (i) *a* cliticises to its left. This order in fact seems to be restricted to the reduced form *a*. Other forms of the HAVE auxiliary follow *nome*, e.g. *avesse* in (v):

subjects are readily dropped. Moreover, the verbal inflection is somewhat "rich," as (35) shows:[21]

| | | | |
|---|---|---|---|
| (35) | (ji) | magne | ('I eat,' etc.) |
| | (tu) | **migne** | |
| | (esse) | magne | |
| | (nu) | **magneme** | |
| | (vu) | **magnete** | |
| | (jisse) | magne | |

An account of the relation between null subjects and person-driven auxiliary selection implies an analysis of null subjects. In fact, there have been two main views on the nature of null subjects and the null-subject parameter in the literature for some time. One view, most influentially put forward in Rizzi (1986a), is that null subjects are occurrences of *pro* in SpecTP. Another view, first put forward by Borer (1986), is that the null subject is directly expressed by the "pronominal" content of the rich verbal agreement inflection, and there is therefore no need for a distinct empty pronoun in SpecTP.

The two views just sketched survive in current work. Starting from Borer (1986), it has been suggested by various authors that, since person-number specification of the subject can be exhaustively computed from the verbal inflection, the preverbal subject is effectively optional and when it appears it acts as a clitic left-dislocated (CLLD) element occupying an A′-position with the verbal inflection functioning analogously to a clitic (see Alexiadou and Anagnostopoulou 1998; Barbosa 1995, 2006; Manzini and Savoia 2005; Nash and Rouveret 1997; Ordóñez 1997; Platzack 2004; Pollock 1997). In terms of current theory this view can be articulated by postulating either that the $\varphi$-features of T are interpretable and there is no EPP feature (and hence no requirement to fill SpecTP), or that there is an interpretable D-feature associated with T which is able to satisfy the EPP without the need for anything to fill SpecTP. On the other hand, Cardinaletti (1997, 2004), Holmberg (2005) and Sheehan (2006) have ar-

(v) Si li nome avesse magnite.
REFL them NOME would-have eaten-pl
'People would have eaten them.'

[21] Müller (2005) proposes an account of the relation between null subjects and rich agreement in terms of impoverishment. Impoverishment rules "neutralize differences between syntactic contexts in morphology" (Müller 2005:3), creating "system-defining syncretisms" (distinct from accidental homophony or gaps in a paradigm)). In this connection, Müller (2005:10) puts forward the following "*pro* generalisation":

(i) An argumental *pro* DP cannot undergo Agree with a functional head $\alpha$ if $\alpha$ has been subjected (perhaps vacuously) to a $\varphi$-feature neutralizing impoverishment in the numeration.

(The reference to the numeration here relates to Müller's arguments that impoverishment must be a pre-syntactic process; see Müller 2005:7–9.) In this way, a connection is established with "rich" agreement, since non-impoverished $\varphi$-features can be realised by distinct vocabulary items while impoverished ones cannot (although a certain amount of accidental homophony and null realisation may exist). The prediction is that fully null-subject languages should lack system-defining syncretisms in their verbal agreement morphology. EA in fact appears to be problematic for this prediction, in that there is a general syncretism between 1sg and 3rd person (both singular and plural), as can be seen in (35).

gued that SpecTP is present, at least in some null-subject languages. Holmberg (2005) and Roberts (2010a) follow Cardinaletti and Starke (1999) in taking *pro* to be a weak pronoun, a DP which is required to appear in certain designated positions (SpecTP in the case of subjects). Furthermore, following a long line of work going back at least to Rizzi (1982), they take *pro* to be licensed by a D-feature associated with $\varphi$-feature-bearing head. Holmberg (2005:556) takes this D-feature to be interpretable, and posits an unvalued D-feature on the subject pronoun.

We can see that the two views converge, or can be taken to converge, on the idea that the inflectional head must have an interpretable D-feature in a null-subject language. For concreteness, we take this to be the core of the null-subject parameter, whatever the further details. This is enough for us to see the connection with person-driven auxiliary-selection, as we have analysed it here.

Consider first the "*pro*-based" account of null subjects, as in Rizzi (1986a), Holmberg (2005), etc. If *pro* is licensed by the D-feature associated with the head which bears the unvalued $\varphi$-features, this means that, where the auxiliary is BE and, according to our analysis in Sect. 2 above, the $\varphi$-features probing the subject are associated with $v_{Aux}$, the D-feature must be associated with $v_{Aux}$. The $\varphi$-features of $v_{Aux}$ are unvalued, as we have said (and is standardly assumed for the features probing the subject). Our proposal in Sect. 2 essentially equates $v_{Aux}$ with an Agr head of the type assumed in Chomsky (1993, 1995), in that its feature content is exhausted by uninterpretable features. Chomsky (1995:349ff) argues that this is undesirable on general grounds. So, if the D-feature that licenses *pro* is interpretable, we can conclude that $v_{Aux}$ must bear this feature in order to have an interpretable feature. It must in fact be true in general that $v_{Aux}$ has a D-feature, both when it bears $\varphi$-features, i.e. when the auxiliary is BE, and when it does not (when the auxiliary is HAVE and T therefore has $\varphi$-features, see Sect. 2). Since $v_{Aux}$ always moves to T, the D-feature will be associated with T when the latter bears $\varphi$-features, in conformity with standard assumptions regarding *pro*-licensing (and the recent elaborations in Holmberg 2005 and Roberts 2010b). The other uninterpretable features on $v$ will have been valued and deleted at spell-out in the meantime. Finally, we must assume that $v_{Aux}$'s V-feature is uninterpretable; this is unproblematic, we could in fact regard the selection-like relations with $v_{Prt}$ described in (9/9′) as instances of Agree triggered by the active uninterpretable V-feature of $v_{Aux}$.

If, on the other hand, we assume that the inflectional heads bear an interpretable D-feature and that this, or perhaps just the fact that their $\varphi$-features are interpretable, suffices to allow for null subjects (with or without the postulation of an EPP feature on T), then clearly, since $v_{Aux}$ is one of the inflectional heads in question, wherever a system has person-driven auxiliary selection it will have null subjects.

Hence, we are saying that the features that we need to postulate to account for person-driven auxiliary selection will always be sufficient to license null subjects. Thus, independently of which of the two main approaches to the null-subject parameter turns out to be correct, we derive the following implicational statement:

(36) If a language has person-driven auxiliary selection, that language must be a null-subject language.

Of course, being a null-subject language does not entail person-driven auxiliary selection; (36) is a one-way implication. (36) predicts the existence of three types of language, as follows:

(37) a. Null-subject, person-driven auxiliary selection: EA, other Central-Southern Italo-Romance varieties.
b. Null-subject, no person-driven auxiliary selection: Standard Italian, Spanish, Greek, etc.
c. Non-null-subject, no person-driven auxiliary selection: English, German, etc.

The fourth logical possibility (non-null-subject, person-driven auxiliary selection) is ruled out, either by the general ban on functional heads like $v_{Aux}$ bearing only uninterpretable features, or by the fact that in null-subject languages $\varphi$-bearing heads have D-features; the choice between these two accounts depends on which account of the null-subject parameter we adopt. We can now see why there are no person-driven auxiliary systems in the Germanic languages; this is because no Germanic language is a null-subject language (we also predict that if there are Romance languages with subject clitics and person-driven auxiliary selection, such Grumello and Maserrano as discussed above, the subject clitics in these varieties will be agreement markers, not true pronouns). In this way, we derive our typological observation and answer question (6c).

## 5 Conclusions

In conclusion, let us repeat the questions posed in (6):

(6) a. What is the connection between person-driven auxiliary selection and split-ergativity?
b. How does EA past participle agreement work, and why is it an exception to Belletti's generalization?
c. Why is the person-driven pattern absent in Germanic, while both the Italian-style pattern and the Spanish-style pattern are found?

We have seen that the answer to (6a) lies in the fact that, given Müller's (2004) account of ergativity, both systems involve probing of the subject's $\varphi$-features by $v$ under certain conditions. The answer to (6b) crucially involves feature-inheritance inside the lower clausal phase, combined with our assumptions regarding underspecified features and phase sliding. The answer to (6c) again crucially involves $v_{Aux}$; this element must bear an interpretable D-feature as a facet of the licensing of null subjects. Hence the generalisation in (30), from which the absence of person-driven auxiliary selection in Germanic follows as a special case. Given the evidence (mentioned in Sect. 2 above) that person-driven auxiliary selection develops diachronically from a system like that found in Standard Italian where auxiliary selection is determined by the argument structure of the main verb, we can speculate that no Germanic language was able to develop a split auxiliary system because no Germanic language was a null-subject languages at the relevant point in its history.

To the extent that we can localise all the relevant properties of EA as a single person feature of a single functional category, $v_{Aux}$, our analysis is consistent with the general approach to parametric variation assumed in current syntactic theory. We consider this to be a further positive result of our investigation.

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